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Essai critique sur l'hypothèse des atomes dans la science contemporaine. ARTHUR HANNEQUIN. Paris, Alcan. 1899. Second Edition. Pp. 457.

Social Phases of Education in the School and the Home. SAMUEL T. DUTTON. New York and London, The Macmillan Company. 1899. Pp. viii + 259.

The Fur Seals and Fur Seal Islands of the North Pacific Ocean. DAVID STARR JORDAN. Washington, Government Printing Office. 1898. Pp. 606 and 13 Plates.

SCIENTIFIC JOURNALS AND ARTICLES.

American Chemical Journal, May. The Action of Metals on Nitric Acid: By P. C. Freer and G. O. Higsley. The reduction of strong acid is due to the metals alone, but with dilute acid both metal and hydrogen take part in the reduction. On the Dissociation of Phosphorus Pentabromide in Solution in Organic Solvents: By J. H. Kastle and W. A. Beatty. On the Color of Compounds of Bromine and of Iodine: By J. H. Kastle. The explanation offered is that the color is due to a slight dissociation of the solid substance. On the Formation of Potassiums B-ferricyanide through the action of Acids on the Normal Ferricyanide: By J. Locke and G. H. Edwards. A very small amount of acid is sufficient to produce this change without the presence of any oxidizing agent. Trinitro-phenylmalonic Ester: By C. L. Jackson and J. I. Phinney. The Relation of Trivalent to Pentavalent Nitrogen: By A. Lachman. The authors report the results so far obtained in an attempt to establish the trivalent or pentavalent condition of nitrogen, in various compounds, by the action with zinc ethyl.

J. ELLIOTT GILPIN.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES—SECTION OF BIOLOGY, MARCH 14, 1899.

OBSERVATIONS on the Germ Layers of Teleost Fishes: F. B. Sumner.

Mr. Sumner showed that Teleost eggs can be divided into two types according to their approach to the holoblastic form of cleavage; that germ disc and yolk cannot strictly be contrasted as epiblast and hypoblast respectively; that the germ-ring arises either by involution or delamination or both; that the 'prostoma' of

Kupffer is a reality. Kupffer's contention that the prostoma represents the entire blastopore is, however, wrong. Mr. Sumner showed also that the hypoblast in the stone-catfish is derived partly from the posterior lip of the prostoma and partly from the germ-ring; perhaps wholly from the prostoma in the trout; that the function of Kupffer's vesicle, which arises as a cleft between the prostomal entoderm and the involuted margin of the blastoderm, is probably the absorption of fluid nutriment elaborated from the yolk by the periblast.

Further Notes on the Echinoderms of Bermuda: H. L. Clark. Presented by Professor C. L. Bristol.

Dr. Clark's paper sums up the work on the Echinoderms collected by the New York University Expedition in the summers of '97 and '98, and presents a check list of the Echinoderms thus far reported from Bermuda. The collection of 1898 was especially rich in holothurians, containing many species hitherto collected, adding several others to the list from Bermuda, and one new to science. From his work on *Stichopus* Dr. Clark suggests that the different forms found in Bermuda may be mature and immature individuals of *S. möbii* (Semp.). *Synapta vivipara* was found under conditions widely different from those in Jamaica. The new *Synapta* is allied to *S. inhærens*, and Dr. Clark has named it *S. acanthia*.

The Echinoderms from Bermuda are distributed as follows: Asteroidea, 4; Ophiuroidea, 7; Echinoidea, 8; Holothuroidea, 10.

The Sequence of Moults and Plumages of the Passerine Birds of New York State: Jonathan Dwight, M. D.

Dr. Dwight fully described the process of moulting and its relation to the plumage of about one hundred and fifty species of land birds common to eastern North America. The early plumage of these birds was described, together with the time and method of the acquisition of later plumages. Stress was laid upon the underlying principles of the sequence or succession of plumages peculiar to each species, and the moults and plumages were classified according to a definite scheme by the author.

GARY N. CALKINS,
Secretary.

SECTION OF GEOLOGY AND MINERALOGY, APRIL
17, 1899.

PROFESSOR J. J. STEVENSON in the Chair.

Dr. A. A. Julien presented a 'Note on a Feldspar from the Calumet Copper Mine, Keweenaw Point, Michigan,' with specimens collected by him at the first opening of that mine. The wide distribution of the mineral was pointed out, through both the Portage Lake and Ontonagon districts, as drusy linings of cavities in the amygdaloid and in crystals scattered through the cement of the copper conglomerate. The crystals were of simple type, a rhombic prism with orthodome modification on obtuse angles, but both faces and cleavage-planes were often distinctly curved. By the complete analysis presented, it was identified as a normal orthoclase, with an unusually large proportion of protoxides in isomorphous replacement. These seemed to bear a relationship to the instability of the mineral, indicated by its general partial decomposition; to its remarkably low Specific Gravity, 2.455; and possibly, in part, to the curvature of its planes.

Professor J. F. Kemp called attention to the unusual presence of cobalt oxide in a feldspar, shown in the analysis.

Dr. E. O. Hovey then gave a very interesting description, with lantern illustrations, of 'Geological and Mineralogical Notes Gathered during a Collecting Trip in Russia,' in connection with the excursions of the recent International Congress. Many of the lantern pictures were beautifully colored; they referred in part to ethnographic observations; and the accompanying remarks awakened much interest.

ALEXIS A. JULIEN,
Secretary of Section.

GEOLOGICAL CONFERENCE AND STUDENTS' CLUB
OF HARVARD UNIVERSITY.

Students' Geological Club, March 28.—Mr. C. H. White explained a method of field work that has been developed by the members of the Appalachian Division of the United States Geological Survey. It can be used only in regions of distinctly bedded rocks of low dip, and has the merit of greatly facilitating both field and laboratory work. Mr. A. W. Grabau exhibited a

number of new paleontological specimens which were collected by Mr. W. W. Dodge from the middle Cambrian, at Braintree, Mass. These included nine very perfect specimens of a new species of *Acrothele*.

Geological Conference, April 4, 1899.—In 'A Comparison of Snow-chart with Ice-lobes,' Mr. R. R. Kent described a method of comparing the location of snow accumulations of the present time with those of glacial time; the position of the former being indicated by snow-charts and the latter by frontal moraines. From these snow-charts, issued weekly by the Weather Bureau, composite charts for the winters of '96-'97 and '98-'99 were constructed. These showed that the lines of equal snow-averages follow lobations which in character and position closely correspond to the glacial lobes. The driftless area of Wisconsin was thus shown to have been an area of minimum snow-average, during the past winter. In their tendency toward local retention, the distributions of snow for these two winters show in miniature a remarkable likeness to the supposed distribution of glacial times.

In considering the causes of annual isochional lobations, maps were shown which gave lines indicating equal frequency of exposure of local areas to traversal by cyclonic areas during these winters. These present a remarkable resemblance between these lines and the distribution of snow. Accordingly, the speaker concluded that the lobations shown by the charted averages are due to meteorological rather than to topographical causes.

Dr. R. A. Daly communicated the results of a study of etch figures produced with hydro-fluoric acid and the caustic alkalis on the principal planes of the amphiboles, with especial reference to the cleavage prism. He summarizes the chief problems which he studied in this connection as follows: "(1) The orientation of the amphiboles—that of Tschermak (Dana, Lacroix) is preferred to that of Norden-skiöld (Hintze); (2) the orientation of cleavage pieces of amphiboles; (3) the limits of variation on (110), (010) and (100) of the different species of amphibole—these can be used for determinative purposes; (4) the testing of Retgers' law that isomorphous bodies must have, using the

same reagent, similar etch figures on the same face—it is concluded that, if the law hold actinolite and all amphiboles without a sesquioxide, cannot be isomorphous, with a hornblende ; (5) the holohedral character of all amphiboles—it is established for monoclinic and orthorombic species ; (6) the demonstration of the orthorombic character of anthophyllite and of gedrite, a doubt of which has been expressed by Hintze and others ; (7) a comparison between the amphiboles and pyroxenes as to etching properties—an extraordinary likeness in the figures produced on the pinacoids and on the artificial face of actinolite representing in position the plane (110) of diopside seems to ally the two groups even more closely than has been suspected ; (8) the proof that close attention must be given to the *method* of etching with hydrofluoric acid."

The discovery of anomalous etch-pits on a hornblende from Philipstad, Sweden, led to the recognition of a new variety of hornblende characterized by a well-marked zonal structure, an unusually small optical angle, an unusual pleochroism and absorption scheme, and a peculiar chemical composition. For details see Proceedings of the American Academy of Arts and Sciences, Vol. XXXIV., Nos. 15 and 16, March, 1899.

J. M. BOUTWELL,
Recording Secretary.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

At the meeting of the Academy of Science of St. Louis of May 1, 1899, nineteen persons present, the Secretary presented by title a paper by Professor F. E. Nipher, on gravitation in gaseous nebulae.

Dr. Amand Ravold exhibited cultures and microscopic specimens showing the *Micrococcus intercellularis meningitidis* of Weichselbaum, obtained from a case of cerebro-spinal meningitis, and stated that this case afforded an interesting instance of germ infection through the placenta, inasmuch as the cerebro-spinal system of an unborn child of the patient was likewise found to be infected by the germ, from which source, in fact, the specimens exhibited were derived.

Mr. H. von Schrenk presented the general re-

sults of a study of certain diseases of the yellow pine, illustrating his remarks by the exhibition of a number of specimens showing the characteristic phenomena of the diseases and the fruiting bodies of the fungi which cause them.

WILLIAM TRELEASE,
General Secretary.

UNIVERSITY OF COLORADO SCIENTIFIC SOCIETY.

THE following papers have been presented during the year : 'Methods of determining the Solar Parallax,' Dr. Frederick L. Chase, of Yale University; 'A Theory of the Nature of Philosophy,' Dr. Francis Kennedy; 'The Velocity of Electrical Waves,' Dr. Wm. Duane; 'Graphical Methods of determining Stresses in framed Structures,' Mr. Frederick T. Rubidge; 'Wireless Telegraphy,' Dr. Wm. Duane.

The Society meets the first Friday in each month from November to March. All men of science are invited to attend the meetings.

FRANCIS RAMALEY,
Secretary.
BOULDER, COLO., April 28, 1899.

DISCUSSION AND CORRESPONDENCE.

THE STORAGE OF PAMPHLETS.

RECENT correspondence on this subject in the pages of SCIENCE suggests that a description of the method adopted in my private library, as also in that of the Geological Department of the British Museum, may interest some of your readers.

The pamphlet-box finally evolved after some years of experiment is constructed thus: a solid back of wood (a), to each side of which is hinged (at h) a half-box (b). When closed, one half slightly overlaps the other by a rebated edge, so as to exclude dust; they may be fastened by a catch, but this is quite unnecessary in the smaller and lighter makes. When open both sides and back lie flat on the table; or, if space be limited, one side can hang down over the edge of the table or can be kept standing up. In the lighter makes the sides are of pasteboard, and are hinged to the back by a linen hinge (h), the outside is all covered with stout binder's cloth and the inside is lined with white glazed paper. In the heavier makes (suitable for large quartos or for a public library) the